

the encoded second audio signal;

a video device that displays the decoded video portion of the motion picture to the audience;

a transmitter that transmits the decoded first and second audio signals from the decoder in synchronization with a transmission of the decoded video portion and the corresponding audio portion of the motion picture, to a plurality of personal listening devices, wherein each of the plurality of personal listening devices is associated with each of the plurality of listeners in the theatre audience, each of the personal listening devices comprising:

a second receiver that receives the first transmitted audio signal;

a third receiver that receives the second transmitted audio signal;

a first adjustment device that adjusts the first audio signal based on inputs from the user;

a second adjustment device that adjusts the second audio signal based on inputs from the user;

an audio signal combining device that combines the first audio signal's spatial information channels with corresponding spatial information channels of the second audio signal, to produce a combined audio signal; and

one or more transducers that receives the combined audio signal, converts the combined audio signal to sounds, and outputs the sounds so they may be heard by each of the plurality of listeners associated with each of the plurality of personal listening devices in the audience;

wherein the system permits each of the plurality of listeners to adjust the first and second audio signals independently of other ones of the plurality of listeners in the audience.

144. (New) The system of claim 143, wherein the first and second receivers connect to one or more portions of an airline seat.

145. (New) The system as in claim 143, wherein at least one of the first audio signal and the second audio signal is a stereo signal, the stereo signal having left and right spatial information channels.

146. (New) The system as in claim 143, wherein at least one of the first audio signal and the second audio signal is a surround signal, the surround signal having spatial information channels that include left, center, right, and one or more surround channels.

147. (New) The system as in claim 143, wherein at least one of the first audio signal and the second audio signal is a multiple channel surround signal, the multiple channel surround signal having spatial information channels including left, left center, center, right center, right, and one or more surround channels.

148. (New) The system as in claim 143, wherein the second receiver receives a first digital bit stream that includes the first audio signal and the third receiver receives a second digital bit stream that includes the second audio signal, the system further comprising:  
a second decoder that decodes the first digital bit stream; and  
a third decoder that decodes the second digital bit stream.

149. (New) The system as in claim 143, wherein the personal listening devices are at least one of stereo headphones, a monaural earphones, hearing aids, and assistive listening devices.

150. (New) The system as in claim 143, wherein the personal listening devices are body-worn receivers, the body-worn receivers providing the combined audio signal to one or more electro-acoustic transducers.

151. (New) The system as in claim 143, further comprising a processor that computes the ratio of the volume of the first audio signal to the volume second audio signal, wherein at least one of the first adjustment device, the second adjustment device, and the audio signal combining device

automatically adjusts for and maintains the ratio of the first audio signal volume to the second audio signal volume.

152. (New) The system as in claim 151, wherein the processor computes the standard deviation of the audio signal over a finite time period.

153. (New) The system as in claim 151, wherein the ratio is stored in a memory for use by the audio signal combining device.

154. (New) The system as in claim 151, wherein the first and second adjustment devices are controlled by the user through a graphical user interface.

155. (New) The system as in claim 151, wherein the first adjustment device and the second adjustment device are coupled to a single user controllable volume adjustment device, the single user controllable volume adjustment device operating to adjust the volume of the combined audio signal through so that movement of the single user controllable volume adjustment device in a first direction increases the volume of the first audio signal level and decreases the volume of the second audio signal, and movement in a second direction increases the volume of the second audio signal and decreases the volume of the first audio signal.

156. (New) A computer, comprising:  
the system as in claim 143, wherein the first and second adjustment devices are operated using at least one of computer software and hardware.

157. (New) The system as in claim 143, wherein the personal listening devices are at least one of a cellular telephone, a wireless communication device, a body-worn computer, a personal data assistant, a personal audio playback device, a television and a DVD player.

158. (New) The system as in claim 143, wherein the second audio signal includes at least a portion of the first audio signal.

159. (New) A home theatre system that outputs a motion picture to each of a plurality of listeners in a manner that permits individualized audio volume adjustment for the plurality of listeners located in an audience of the home theatre environment, comprising:

a first receiver that receives an encoded video portion of the motion picture, a corresponding encoded audio portion of the motion picture, an encoded first audio signal being substantially a vocal signal and having one or more channels of spatial information, and an encoded second audio signal including substantially audio content other than the audio content of the first audio signal and having one or more channels of spatial information;

a decoder that decodes the encoded video portion of the motion picture, the corresponding encoded audio portion of the motion picture, the encoded first audio signal, and the encoded second audio signal;

a video device that displays the decoded video portion of the motion picture to the audience;

a transmitter that transmits the decoded first and second audio signals from the decoder in synchronization with a transmission of the decoded video portion and the corresponding audio portion of the motion picture, to a plurality of personal listening devices, wherein each of the plurality of personal listening devices is associated with each of the plurality of listeners in the theatre audience, each of the personal listening devices comprising:

a second receiver that receives the first transmitted audio signal;

a third receiver that receives the second transmitted audio signal;

a first adjustment device that adjusts the first audio signal based on inputs from the user;

a second adjustment device that adjusts the second audio signal based on inputs from the user;

an audio signal combining device that combines the first audio signal's spatial information channels with corresponding spatial information channels of the second audio signal,

to produce a combined audio signal; and

one or more transducers that receives the combined audio signal, converts the combined audio signal to sounds, and outputs the sounds so they may be heard by each of the plurality of listeners associated with each of the plurality of personal listening devices in the audience;

wherein the system permits each of the plurality of listeners to adjust the first and second audio signals independently of other ones of the plurality of listeners in the audience.

160. (New) The system of claim 159, wherein the first and second receivers connect to one or more portions of a chair.

161. (New) The system as in claim 159, wherein at least one of the first audio signal and the second audio signal is a stereo signal, the stereo signal having left and right spatial information channels.

162. (New) The system as in claim 159, wherein at least one of the first audio signal and the second audio signal is a surround signal, the surround signal having spatial information channels that include left, center, right, and one or more surround channels.

163. (New) The system as in claim 159, wherein at least one of the first audio signal and the second audio signal is a multiple channel surround signal, the multiple channel surround signal having spatial information channels including left, left center, center, right center, right, and one or more surround channels.

164. (New) The system as in claim 159, wherein the first receiver receives a first digital bit stream that includes the first audio signal and the second receiver receives a second digital bit stream that includes the second audio signal, the system further comprising:

a second decoder that decodes the first digital bit stream; and

a third decoder that decodes the second digital bit stream.

165. (New) The system as in claim 159, wherein the personal listening devices are at least one of stereo headphones, a monaural earphones, hearing aids, and assistive listening devices.

166. (New) The system as in claim 159, wherein the personal listening devices are body-worn receivers, the body-worn receivers providing the combined audio signal to one or more electro-acoustic transducers.

167. (New) The system as in claim 159, further comprising a processor that computes the ratio of the volume of the first audio signal to the volume second audio signal, wherein at least one of the first adjustment device, the second adjustment device, and the audio signal combining device automatically adjusts for and maintains the ratio of the first audio signal volume to the second audio signal volume.

168. (New) The system as in claim 167, wherein the processor computes the standard deviation of the audio signal over a finite time period.

169. (New) The system as in claim 167, wherein the ratio is stored in a memory for use by the audio signal combining device.

170. (New) The system as in claim 167, wherein the first and second adjustment devices are controlled by the user through a graphical user interface.

171. (New) The system as in claim 167, wherein the first adjustment device and the second adjustment device are coupled to a single user controllable volume adjustment device, the single user controllable volume adjustment device operating to adjust the volume of the combined audio signal through so that movement of the single user controllable volume adjustment device in a first direction increases the volume of the first audio signal level and decreases the volume of the second audio signal, and movement in a second direction increases the volume of the second audio signal and decreases the volume of the first audio signal.

172. (New) A computer, comprising:

the system as in claim 159, wherein the first and second adjustment devices are operated using at least one of computer software and hardware.

173. (New) The system as in claim 159, wherein the personal listening devices are at least one of a cellular telephone, a wireless communication device, a body-worn computer, a personal data assistant, a personal audio playback device, a television and a DVD player.

174. (New) The system as in claim 159, wherein the second audio signal includes at least a portion of the first audio signal.

175. (New) A system that provides an audio/visual output to each of a plurality of listeners in a manner that permits individualized audio volume adjustment for the plurality of listeners located in an audience, comprising:

a first receiver that receives an encoded video portion of the audio/visual output and a corresponding encoded audio portion of the audio/visual output, wherein the encoded audio portion comprises a first audio signal being substantially a voice signal and a second audio signal including substantially audio content other than the voice signal;

a decoder that decodes the encoded video portion of the audio/visual output and corresponding encoded audio portion of the audio/visual output, the encoded first audio signal, and the encoded second audio signal;

a video device that displays the decoded video portion of the audio/visual output to the audience;

a transmitter that transmits the first and second audio signals from the decoder in synchronization with a transmission of the decoded video portion of the audio/visual output, to a plurality of personal listening devices, wherein each of the plurality of personal listening devices is associated with each of the plurality of listeners in the audience, each of the personal listening devices comprising:

a second receiver that receives the first transmitted audio signal;

a third receiver that receives the second transmitted audio signal;  
a first adjustment device that adjusts the first audio signal to provide a first adjusted audio signal based on inputs from the user;  
a second adjustment device that adjusts the second audio signal to provide a second adjusted audio signal based on inputs from the user;  
an audio signal combining device that combines the first adjusted audio signal with the corresponding second adjusted audio signal, to produce a combined audio signal; and  
one or more transducers that receives the combined audio signal, converts the combined audio signal to sounds, and outputs the sounds so they may be heard by each of the plurality of listeners associated with each of the plurality of personal listening devices in the audience;  
wherein the system permits each of the plurality of listeners to adjust the first and second audio signals independently of other ones of the plurality of listeners in the audience.

176. (New) The system of claim 175, further comprising a speaker system that emits the corresponding audio portion of the motion picture to the audience, if enabled.

177. (New) The system of claim 176, wherein at least one of the first receiver and the second receiver receives the respective transmitted audio signals independently of the speaker system.

178. (New) A broadcasting system, comprising:

an encoder that encodes a video signal and a multichannel audio program corresponding to the video program, the multichannel audio program comprising:

a first audio signal being substantially a vocal signal and having one or more channels of spatial information;

a second audio signal including substantially audio content other than the audio content of the first audio signal and having one or more channels of spatial information; and

one or more auxiliary signals including amplitude level information for each of the first and second audio signals, wherein the first and second audio signals and the one or more



auxiliary signals are time aligned with each other and the video signal;

a modulator that modulates the encoded video signal, first audio signal, second audio signal, and one or more auxiliary signals to generate a modulated signal; and

a transmitter that transmits the modulated signal.

179. (New) The broadcasting system of claim 178, wherein the one or more auxiliary signals are digitally encoded as metadata into at least one of the first and second audio signals.

180. (New) The broadcasting system of claim 178, wherein the amplitude information included in the one or more auxiliary signals includes production mix amplitude levels.